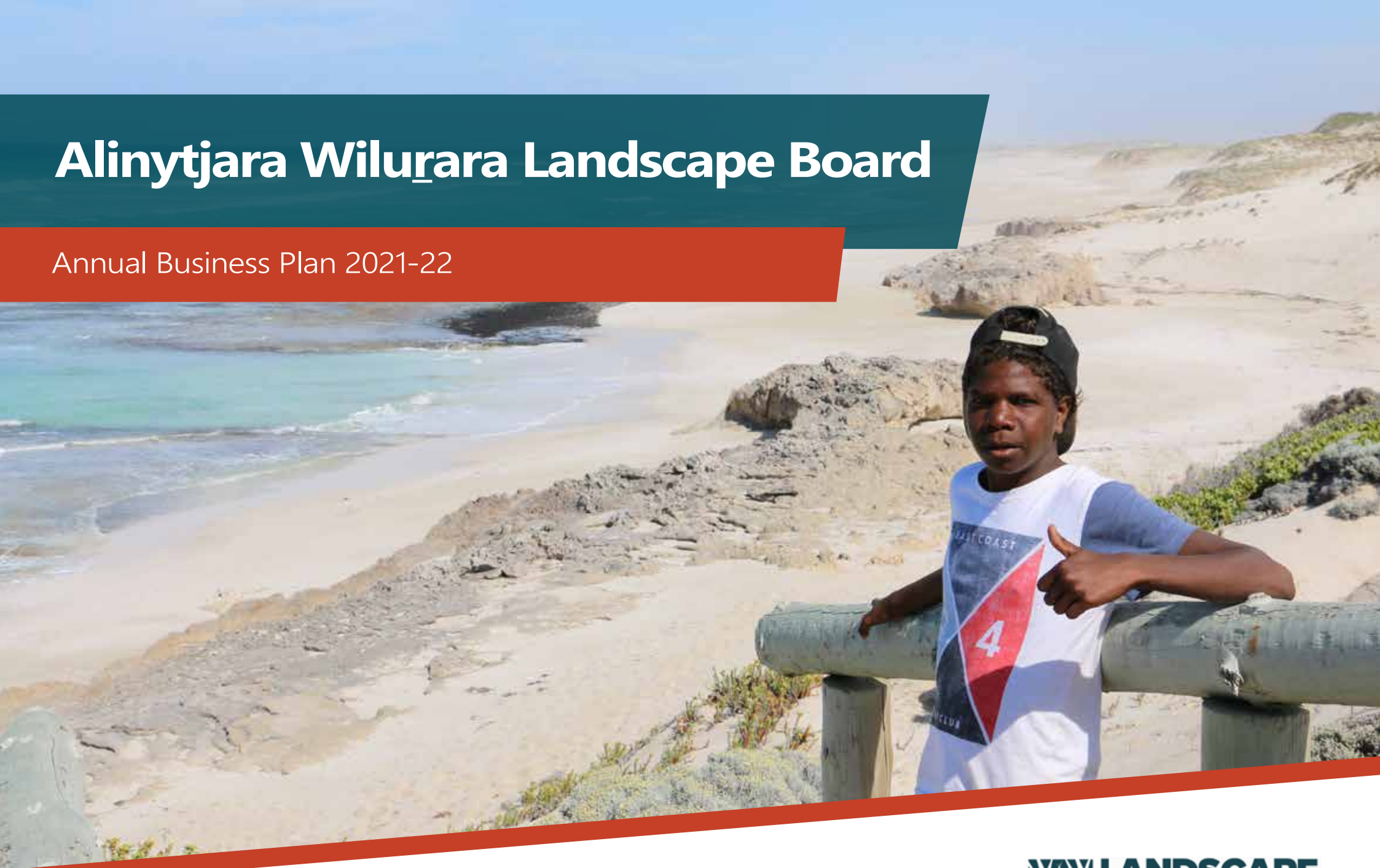


Alinytjara Wilurara Landscape Board


Annual Business Plan 2021-22



*A healthy and valued region, managed responsibly now,
for the future benefit of people and country.*



Aboriginal and Torres Strait Island people should be aware that this publication may contain images or names of people who have since passed away.



This is a regional landscape board Business Plan under the *Landscape South Australia Act 2019* in accordance with the requirements of section 51(1), (3).

This annual business plan is consistent with the Alinytjara Wilurara Landscape Plan 2021-26 and has been adopted by the Alinytjara Wilurara Landscape Board to fulfill the Board requirements under the *Landscape South Australia Act 2019*.

I, Peter Miller, Acting Presiding Member, Alinytjara Wilurara Landscape Board, after taking into account and in accordance with the requirements of section 51 of the *Landscape South Australia Act 2019*, hereby adopt the 2020-2021 Business Plan on behalf of the Alinytjara Wilurara Landscape Board.



Peter Miller
Acting Presiding Member
24/06/2021

Acknowledgment of country

The Alinytjara Wilurara Landscape Board acknowledges the Traditional Owners of the Alinytjara Wilurara region, the elders - past, present and future - and respects the relationship Aboriginal people have to country.

The Board is committed to supporting Traditional Owners' involvement of Aboriginal people and organisations in the management of the region's landscapes and in recognising Aboriginal culture and knowledge of natural resources in the landscape.

Annual Business Plan

2021-22

Contents

Alinytjara Wilurara Region	2
Regional Priorities	3
Investment	4
Sources of Funding	5
The Alinytjara Wilurara Landscape Board	6
Staff Resources	7
Delivery	8
Monitoring and Evaluation	9
Appendix 1: Water Affecting Activities Control Policy	10

***A healthy and
valued region,
managed
responsibly
now, for
the future
benefit of
people and
Country***

Alinytjara Wilurara Region



The Alinytjara Wilurara (AW) region covers over a quarter of a million square kilometres, stretching from the Northern Territory and West Australian borders south to the Great Australian Bight Marine Park.

The primary land tenure is formally recognised Aboriginal Lands, National Parks, Indigenous Protection Areas, Wildlife Reserves and Wilderness Protection Areas.

The Alinytjara Wilurara region is rich and diverse in its flora, fauna and cultural heritage. It contains some of South Australia's hottest and most remote areas with no permanent rivers or creeks. Water is a limiting factor throughout the region with the recharge of groundwater, rockholes, springs and soaks dependant on infrequent heavy rainfalls. Consistent ground water extraction is therefore unlikely to be sustainable over the medium to long term.

Throughout the region, Aboriginal people have a high degree of cultural connection to country and have recognised traditional ownership of country.



Regional Priorities



Board and Community Leadership

Be strong leaders to make effective decisions by exploring options to deliver better outcomes.

Focus Areas

- Building effective partnerships to maintain regional relevance and support emerging Aboriginal leaders.
- Supporting Land Holding Authorities and Traditional Owners to access resources that facilitate traditional and ecological knowledge transfer.



Healthy Soils

Work with all traditional landholders and key stakeholders to keep country strong, productive and healthy.

Focus Areas

- Supporting Land Holding Authorities and Traditional Owners to:
 - adopt sustainable pastoral practices to reduce soil erosion
 - participate in carbon farming opportunities that support sustainable pastoral practices.



Pest Plant and Animal Control

Keep country strong by managing towards eradication of weeds and feral animals.

Focus Areas

- Working with key stakeholders to support Land Holding Authorities and Traditional Owners to control priority pest plant and animals.



Land and Sea Biodiversity

Keeping Country healthy for native plants and animals to be strong and plenty for everyone now and in the future.

Focus Areas

- Supporting Land Holding Authorities and Traditional Owners to protect and restore important coast and marine ecosystems.
- Supporting Land Holding Authorities and Traditional Owners to maintain and enhance biodiversity, including threatened species, in prioritised ecosystems.



Water Management

Taking care of water for our people and country.

Focus Areas

- Supporting Land Holding Authorities and Traditional Owners to manage ground water affecting activities.
- Supporting Land Holding Authorities and Traditional Owners to actively manage ecologically and culturally significant surface and ground water sites.






Regional Priorities:

AW Landscape Board's five regional priorities are aligned with the 'Back to Basics' priorities identified in the State Landscape Strategy that promote healthy soil, water management, land and sea biodiversity, board and community leadership, pest plant and animal control.

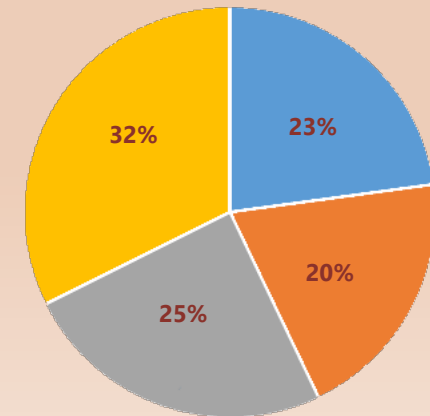
Investment





This table sets out the expenditure and sources of funding for the two-year period from 1 July 2021.

The Board's investment will be delivered through a range of projects and approaches including direct investment, contracts for works or services, and grants to community organisations

Priority Areas		Focus Area	\$ 2021-22	\$ 2022-23
	Board and Community Leadership	Building effective partnerships to maintain regional relevance and support emerging Aboriginal leaders Supporting Land Holding Authorities and Traditional Owners to access resources that facilitate traditional and ecological knowledge transfer	1 230 000	1 261 000
	Healthy Soils	Supporting Land Holding Authorities and Traditional Owners to adopt sustainable pastoral practices to reduce soil erosion	867 511	814 231
	Pest Plant and Animal Control	Working with key stakeholders to support Land Holding Authorities and Traditional Owners to control priority pest plant and animals	762 463	616 378
	Land and Sea Biodiversity	Supporting Land Holding Authorities and Traditional Owners to protect and restore important coast and marine ecosystems Supporting Land Holding Authorities and Traditional Owners to maintain and enhance biodiversity, including threatened species, in prioritised ecosystems	937 755	625 784
	Water Management	Supporting Land Holding Authorities and Traditional Owners to manage ground water affecting activities Supporting Land Holding Authorities and Traditional Owners to actively manage ecologically and culturally significant surface and ground water sites		
TOTAL			3 797 729	3 317 393

Proposed Expenditure 2021 - 22



-  Board leadership and strategy
-  Healthy soil
-  Pest plant and animal control
-  Land and sea biodiversity



Government of
South Australia



Australian Government

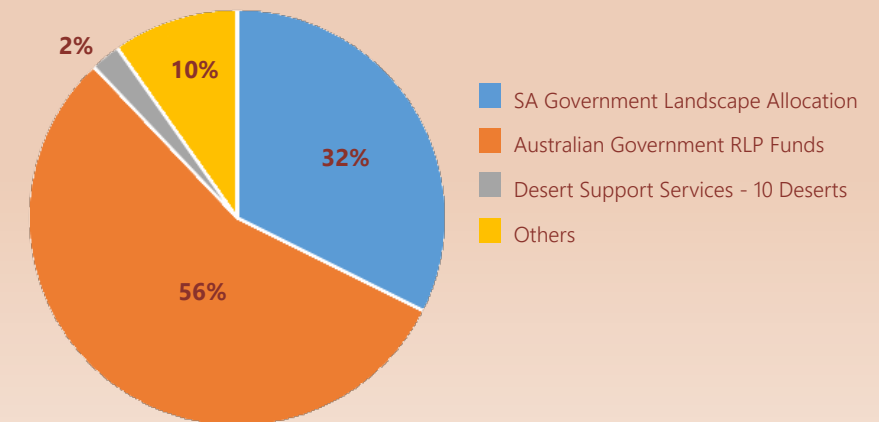


Sources of Funding

The Board receives funds from a range of sources to implement the programs described in the table below. These funds are also used throughout the year to leverage additional funds to the region, either directly to the Board or through some of our partner organisations.

Program	\$ 2020- 21	\$ 2021 - 22	\$ 2022 - 23
State Government Funds			
State recurrent allocation -State Administration Fund ¹	1 200 000	1 230 000	1 261 000
Sub-total	1 200 000	1 230 000	1 261 000
Australian Government Funds ³			
RLP Core Services	531 315	539 552	550 137
RLP Malleefowl	409 800	603 113	500 000
RLP Pastoral	303 192	416 808	360 000
RLP Warru	-	550 000	275 000
Sub-total	1 244 307	2 109 473	1 685 137
Desert Support Services ⁴			
10 DP Oak Valley	101 100	42 000	-
10 DP AMY	60 000	45 000	-
Sub-total	161 100	87 000	-
Others			
Landscape Priority Fund	-	371 256	371 256
Sub-total		371 256	371 256
TOTAL	2 605 407	3 797 729	3 317 393

Projected Income 2021 - 22 by percentage



Program notes:

¹ The State Administration Fund is a statutory fund established by the Landscape South Australia Act 2019

² State Landscape Priority Fund is funded from Landscape levies collected by Green Adelaide in the Adelaide metropolitan area and redistributed to South Australia's regional landscape boards to local communities and landowners to be directly responsible for sustainably managing their region's landscapes with an emphasis on land and water management, pest animal and plant control, and biodiversity.

³ The Australian Government is a key funding partner in the delivery of environment and sustainable agriculture outcomes in the SA Alinytjara Wilurara region. Regional Land Partnerships (RLP) funding concludes in June 2023.

⁴ *Desert Support Services provides a unique opportunity through the 10 Desert Project to demonstrate collective action to build environmental resilience at an unprecedented scale worldwide, led by Indigenous organizations with the support of external stakeholders.

*NOTE:

Desert Support Services and 10 Desert Project currently undergoing transition process.

About the Alinytjara Wilurara Board

The Alinytjara Wilurara Landscape Board is a statutory regional board formed under the Landscape SA Act. The functions of the landscape board are:

to undertake, promote and integrate the management of natural resources within its region, with particular reference to land management, water resource management and pest animal and plant control, to build resilience in the face of change and to facilitate integrated landscape management and biodiversity conservation; and

- a) —
 - i. to prepare a regional landscape plan and (where relevant) water allocation plans, landscapes affecting activities control policies and water affecting activities control policies, in accordance with this Act; and
 - ii. to facilitate the implementation of those plans and policies; and
 - iii. to monitor, evaluate and report on the extent of success of those plans and policies in achieving their objectives; and
- b) to promote public awareness and understanding of the importance of integrated and sustainable natural resources management within its region, to undertake or support educational initiatives with respect to natural resources management, and to provide mechanisms to increase the capacity of people to implement programs or to take other steps to improve the management of natural resources; and
- c) to provide advice with respect to the assessment of various activities or proposals referred to the board under this or any other Act; and
- d) to undertake an active role in ensuring, insofar as is reasonably practicable, that the board's regional landscape plan, water allocation plans and water affecting activities control policies, and the Planning and Design Code under the Planning, Development and Infrastructure Act 2016, form a coherent set of policies and, in so doing, when an amendment to that Code that is relevant to the activities of the board is under consideration under that Act, to work with the entity or entities engaged in undertaking the amendment under that Act; and

- e) to undertake an active role in ensuring, insofar as is reasonably practical, that the board's regional landscape plan, landscape affecting activities control policies, water allocation plans and water affecting activities control policies, advance the objects of the Native Vegetation Act 1991 and promote the conservation of wildlife as envisaged under the National Parks and Wildlife Act 1972; and
- f) at the request of the Minister, or on its own initiative, to provide advice on any matter relevant to the condition of landscapes within its region or on the management of those landscapes, or to provide any other advice or report that may be appropriate in the circumstances; and
- g) to facilitate an understanding of, and to provide information to landowners on, land management, water management and pest animal and plant control, and other issues, relevant to landscape activities and, where necessary, to take action under this Act to ensure compliance with the provisions of this Act; and
- h) to assist in the management of any native animals that adversely affect the natural or built environments, people or primary production or other industries, or to facilitate action to

- mitigate or manage the impact of those native animals, by:
 - i. supporting educational initiatives; or
 - ii. identifying or promoting mechanisms to increase the capacity of people to implement programs to manage the native animals; or
 - iii. supporting other steps or action to improve the management of native animals; or
 - iv. providing information about the management of native animals in these circumstances; or
 - v. taking any other action prescribed by the regulations.
 - vi. such other functions assigned to the board by the Minister or by or under this or any other Act.
 - vii. the board consists of nine community members with a range of skills and knowledge, appointed by the Minister for Environment and Water. Board Members are listed on the Alinytjara Wilurara Landscape Board website.

Alinytjara Wilurara Landscape Board Dec. 2020



About the Alinytjara Wilurara Team

Under the Landscape SA Act, the General Manager and staff work to deliver the programs and services of the Board.

In 2021/22, and taking into consideration flexible working arrangements, it is anticipated that there will be 15 full-time equivalent (FTE) positions employed by the General Manager on behalf of the board. Our current FTE is 13.0 with vacancies

expected to be filled during 2021/22. All staff are public sector employees and no longer part of a specific government department.

The board continues to receive Corporate Services support (including finance, human resources, and information technology) through the Department for Environment and Water in 2021/22.

These services are subject to change following that period.

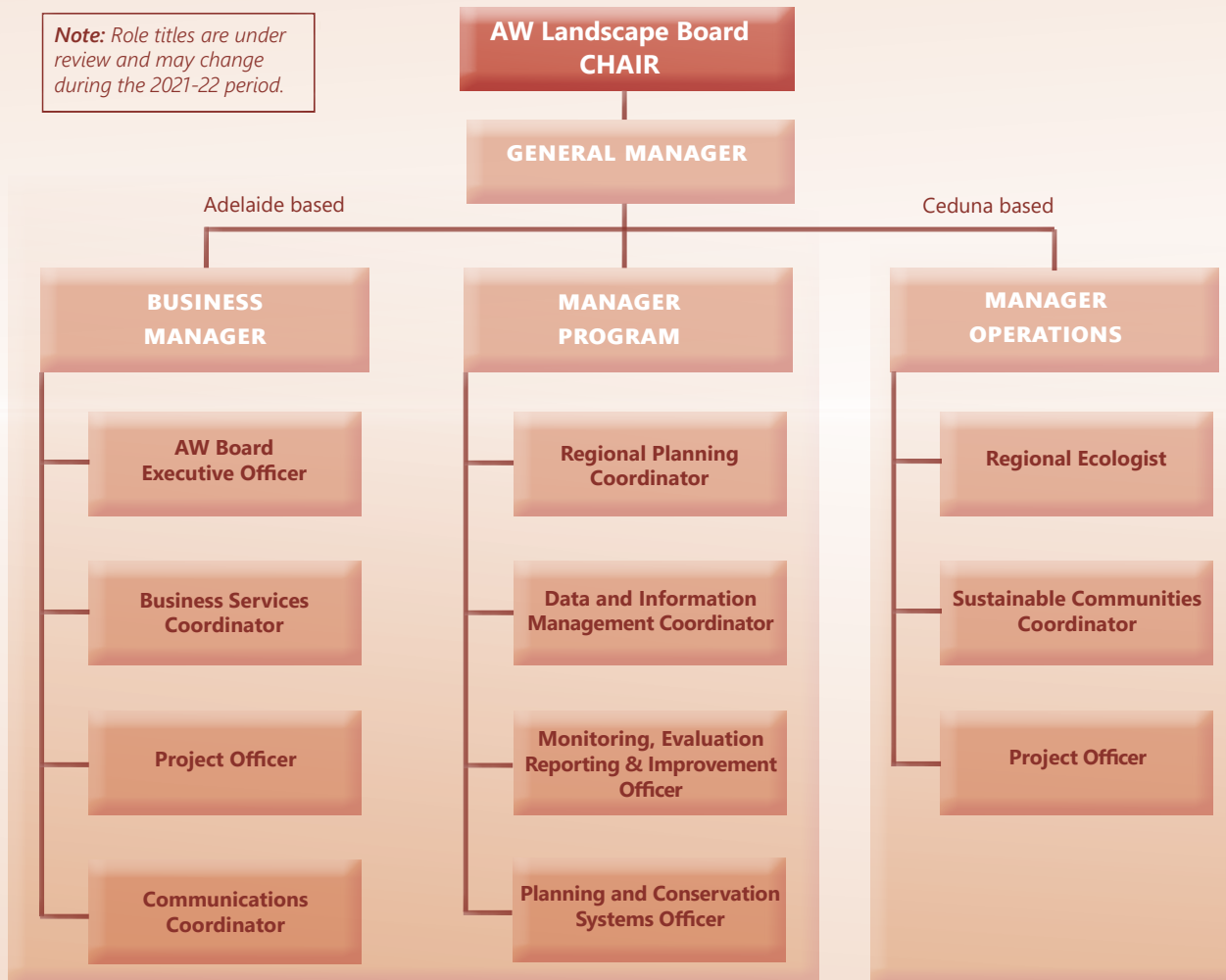
Under the Landscapes SA Act, there will be no changes to the implementation program incorporated in the Alinytjara Wilurara Landscape Board Business Plan 2021-22. Staffing resources, physical resources and infrastructure resources to support the implementation of the board's Business Plan remain unchanged.

The General Manager will be responsible for the development and delivery of an annual business plan between the Minister for Environment and Water and the AW Landscape Board. The General Manager will be accountable for delivering an endorsed annual business plan through the integrated workforce and available resources.

Alinytjara Wilurara team at team workshop in Cleland Wildlife Park 2021



Programs within this plan are implemented directly via public sector employee staff and a range of partnerships, service agreements and grants tied to specific project outcomes. Project Officers are generally funded on a project specific basis through service agreements with state and federal governments.





Delivery

The key role of the Board is to improve the health and trend of natural resources within the region and to support communities in achieving their natural resource management aspirations.

South Australia's Landscape boards are supported in the delivery of their Landscape plans through Commonwealth and State Government funding as well as non-government sources.

With all AW region's land being either Aboriginal community freehold or government reserves the AW Landscape Board is the only South Australian Landscape board that does not receive revenue through water or land levies.

To adequately resource delivery of federal, state and regional priorities the Board will continue to seek additional funding opportunities through external parties.

The Board is dedicated to achieving the best possible results for our region and to do so will continue to build strong relationships and partnerships that enable priority projects to be undertaken.

Monitoring and Evaluation

The AW Landscape Plan has been developed using the Open Standards for the Practice of Conservation, utilised by local governments and NGOs around the world to corroboratively and systematically conserve the environment and allow for adaptive management.

Yearly action and outputs are monitored and strategies and activities adapted as required.

Intermediate outcomes are reviewed at 3 years (or yearly) by assessing the indicators for each objective and adapting strategies and activities.

At the end of five years, target goals are evaluated. Key Evaluation Questions and learnings are used to determine how successfully regional priorities have been met.

A ten year impact assessment will also be undertaken to evaluate the success of implementing the AW Landscape Plan in the longer term.

Overview of planning and reporting Framework

	Planning	Reporting
STATE ↑	10 years State Landscape Strategy Sets the state-wide direction for the management of landscapes and natural resources for the next 10 years. It will include a guiding framework for managing the State's natural resource and high level principles for the Landscape Priority Fund.	Regional Landscape Plan will align with the state landscape strategy and may provide data and information about contributions to progress
	5 years Regional Landscape Plan Sets the strategic direction for the next five years and identifies regional priorities and focus areas.	Report from the review of the Regional Landscape Plan: an evaluation of the progress made towards the plan over the last 4 years to inform the drafting of the subsequent 5 year plan
	Annually Business Plan (includes the Water Affecting Activities Control Policy) Allocates funding for the next financial year to implement programs and projects	Annual Report: an assessment of how the board has succeeded in implementing the preceding year's business plan including the Board's audited accounts and financial statements Achievements Report: a non-statutory report against the Business Plan that demonstrates to the community what the board's funding has been invested in and what has been achieved
REGIONAL	Implementation: Leadership and governance, district work plans guide project and program delivery throughout the region. Effective community engagement, collaboration and partnerships. Continual improvement through effective monitoring and evaluative processes.	





1 Introduction

This part of the Plan deals with the regulation of water affecting activities to protect the water resources and related natural assets of the region in order to sustain natural ecosystems, protect domestic and stock water supplies, protect cultural values and to ensure the orderly development of water resources for economic activities.

2 Water Resources and their Use

Climate

The Alinytjara Wilurara (AW) region is classified as being Arid Desert and Arid Steppe with the median rainfall across the region of 200-300 mm/year, although this is highly variable over time and geographically. Average annual evaporation exceeds 3500 mm, resulting in the rapid evaporation of surface water runoff. Climate statistics show that rainfall in the 'cold steppe' climate zone (i.e. Nullarbor) is winter dominant, whereas rainfall in the 'hot desert' climate zone is summer dominant. Rainfall in the 'hot desert' zone becomes increasingly episodic and unpredictable with decreasing latitude. There are no permanent streams and sparse, small surface water bodies in the form of rock pools and permanent ponds fed by local fractured rock aquifers. Fresh water is available in some areas from unconfined aquifers near the surface, but this supply is only recharged occasionally during high rainfall events that may occur every five to ten years. Deeper, more saline groundwater resources are more extensive but are thought to have very minor rates of recharge.

Water Assets

Because rainfall is highly variable and often absent altogether, water courses are very ephemeral – that is, they are mostly dry, and can occasionally fill or flood. These watercourses are also limited in their distribution with the majority draining through the vast Western Plateau Drainage Division. This includes portions of the Mackay, Finke River, Warburton, Nullarbor and Gairdner Basins (Rowe et al 2007).

Despite the susceptibility of watercourses to high transmission losses, semi-permanent and temporary waterholes are typical within the region's river systems (Rowe et al 2007). There are a large number of waterholes that are deepened and widened reaches of the channel, which hold water from a few months to up to a few years.

Groundwater recharge in areas with an arid climate similar to the AW region occurs only after periods of extreme local rainfall – events of typically greater than 100-200 mm/month. Further, water levels appear to respond to rainfall only in some areas (AGT 2010), suggesting that some groundwater resources in the AW region are not recharged by contemporary rainfall. In these areas, groundwater extractions are not likely to be sustainable in the medium or long term.

Groundwater salinity throughout the AW region is highly variable. Observed salinity is typically below 1000 mg/L in the Musgrave Block. Data are available for Oak Valley, Maralinga, Yalata and coastal areas, but there is little data available for most of the remainder of the

region. Away from the ranges of the Musgrave Block, groundwater is typically highly saline, particularly within the palaeovalley aquifers (Department for Water, 2011).

Water yields from wells are low, ranging from 0.0001 L/s to 34 L/s with a median of just 0.9 L/s. The highest yielding wells are located in the Eucla Basin beneath the eastern margin of the Nullarbor Plain (Department for Water, 2011).

A full review of the geographical and climatic features of this region is presented in the Department for Water report: Non-Prescribed Groundwater Resources Assessment – Alinytjara Wilurara Natural Resources Management Region. Phase 1 – Literature and Data Review (Report No. 2011/18). Much of the data that underpins our current understanding of water in the region is taken from South Australia's geodatabase (SA Geodata). Information on water level and quality are available for current active groundwater observation networks, available via the database Obswell held by the Department for Environment and Water. For the AW region, there is very little recent data available, due to the expense and remoteness of collecting data in the region.

Ecosystems

Perennial desert vegetation will often rely on shallow groundwater, and any interruption to the levels of these groundwater systems is likely to reduce the survival of these plants. Any permanent and semi-permanent surface water bodies act as refuge sites for plants and animals that are dependent on these sorts of environments. The AW region contains a number of aquatic ecosystems:

- stygofauna and underground ecosystems including potentially paleochannels
- springs and soaks
- rockholes
- ephemeral creeks and rivers
- ephemeral lakes.

Cultural Values of Water

Lack of surface water has played a significant role in the history and movement of people in this region. Before European arrival, populations moved across the landscape depending on where the water was. Family groups clustered around larger rockholes and soaks. Aboriginal transport routes were largely governed by the occurrence and distribution of rockholes with tracks radiating out from them in many regions (Harvey Johnston, 1941). Rockholes were a reliable source of water lasting for some months and were used to allow Aboriginal travel between ephemeral sources of game and plants that had responded to local rainfall. More important water supplies usually have a totemic significance and play a very important part in Aboriginal ceremonial and social life and were often central trading locations. Granite domes are also important to Aboriginal law and ceremony, with outcrops indicating ancestral movement across the landscape.

Since European settlement, a number of Aboriginal settlements and missions have started, and then closed down due to lack of water. Important permanent water supplies have been destroyed, forcing settlement patterns of the people of this region to change. The testing of nuclear weapons at Maralinga resulted in an immediate and widespread change to settlement patterns across the whole region.

The cultural connection to water is still very strong for Aboriginal people from this region. Surface water in particular retains high cultural values. The vegetation that is associated with near surface groundwater also retains high cultural values because of their association with accessible water supplies. It is likely that some of these are form important story lines. Any disturbance to these cultural assets is likely to be unacceptable to the Aboriginal land owners.

Contemporary Use and Opportunities

Groundwater supplies are an absolute requirement for permanent settlement within the AW NRM region. Bores supply all townships in the region, with rainwater supplementing supplies.

There is one mine in operation within the region; the Iluka Jacintha-Ambrosia mineral sands mine, north-west of Ceduna within the Yellabinna Regional Reserve. Saline groundwater is being extracted from a palaeochannel approximately 30 kilometres from the site. Parsons Brinkerhoff (2005) estimated 9.5 gigalitres per year (or 17.8 ML/day) is used for the mining process, as well as desalinated (to make potable water) for the mining camp. Iluka Resources Limited (2011) estimate that the water drawn from the paleochannel is approximately 7 GL/a and is expected to consume in the order of 6 per cent of the entire palaeochannel volume over the life of the mine. This water is extracted from the Eucla Basin.

The Challenger Gold Mine, while located outside the AW region's boundary, sources 580 ML of groundwater from palaeovalley and weathered and fractured rock aquifers in the Gawler Craton (Watt and Berens 2011). As groundwater within the palaeovalleys of the Gawler Craton is known to drain westwards into the Eucla Basin, the mine could have some impact on groundwater resources within the region (Watt and Berens 2011).

Currently, pastoralism occurs in the APY region (only) using a sub-lease model. Certain parcels of land (paddocks) are leased by APY Executive to individual Anangu under a Pastoral Development License (who may or may not be the traditional owner of the land), who then sub-lease to external pastoral companies. All paddocks are then sub-leased for agistment. There are 30 Pastoral Development Licenses in the APY issued to 30 separate individuals. New leases cannot be granted for longer than five years, although leases granted in the past have been for much longer (up to 25 years for example).

As there are no surface water resources that can support cattle, all water is sourced from bores, which is pumped into holding tanks which then supply troughs via gravity, controlled by a float valve. The bores are pumped using windmills, solar pumps or generators.

The water supply infrastructure is in various stages of repair: water can be lost from open tanks, leaking tanks and troughs, faulty float valves, and drinking by camels, donkeys, and native animals. Bore pumps fail from time to time. There are no excluders on the top of most tanks, which means dead animals (especially birds) can contaminate the water supplies. If the tanks were sealed, water would not be lost to evaporation and water quality would not be compromised with algae and dead animals. There is no formal monitoring program for the bores, and some of the watering points may be having localised impacts on the aquifer. The quality of water in bores can vary from fresh to brackish.

In 2009-10 the Australian Bureau of Statistics reported that there were 12,062 Dry Sheep Equivalent (DSE) in the Alinytjara Wilurara region, which required approximately 12.8 GL/a of water. Current stocking rates are around 7,000 head which are watered from bores extracting groundwater, using a total of 7 GL/annum. There is anecdotal evidence that some bores that supply cattle have collapsed from overuse.

3. Definitions

The *Landscape South Australia Act 2019* (the Act) defines 'water resource' to mean "a watercourse or lake, surface water, underground water, stormwater (to the extent that it is not within a preceding item) and effluent". For the purposes of this plan, the Act includes the following definitions relevant to water resources:

'Lake' means a natural lake, pond, lagoon, wetland or spring (whether modified or not)

'Wetland' means an area that comprises land that is permanently or periodically inundated with water (whether through a natural or artificial process) where the water may be static or flowing and may range from fresh water to saline water and where the inundation with water influences the biota or ecological processes (whether permanently or from time to time)

'Watercourse' means a river, creek or other natural watercourse (whether modified or not) in which water is contained or flows whether permanently or from time to time and includes:

- a) a dam or reservoir that collects water flowing in a watercourse
- b) a lake through which water flows
- c) a channel into which the water of a watercourse has been diverted
- d) part of a watercourse
- e) an estuary through which water flows.

'Flood plain' of a watercourse means the land adjoining the watercourse that is periodically subject to flooding. Water resources in the region are uniquely different to the common perception of rivers, creeks and lakes. Rivers and creeks in the region often consist of braided channels, waterholes and broad areas of floodplain, while lakes are usually dry salt beds, clay pans or temporary waterholes situated along creek beds. For example,

springs and associated wetlands fall within the definition of 'lake' under the Act but would not be commonly considered to be a lake.

Extensive areas of the region, where cyclical flooding occurs, may also fall within the definition of 'wetland' and are therefore defined as a lake for the purposes of the Act. Again, most people would not consider such areas to be a lake when considering some activity, which under the Act would be considered a water affecting activity. Requiring a permit for an activity in relation to a lake in the region would therefore apply the water affecting activity to large areas of the region.

Consequently care has been exercised in the use of the term lake in water affecting activities.

For the purposes of this plan:

'Waterhole' means a body of water that is a natural collection point in a drainage area, which retains water after flow for an extended period. 'Rockhole' means a place where water is permanently or for extended periods collected irrespective of how the water got there initially.

For consistency with the Act, both a waterhole and a rockhole are considered a lake for the purposes of this plan.

4. Regulating Water Affecting Activities

Part 4 of the Act deals with the management and protection of water resources. Water affecting activities are activities that have the potential to affect water resources and, consequently, the people and ecosystems which rely on them. Pursuant to section 47 of the Act, this plan sets out the matters which the Board will consider when exercising its power to grant or refuse permits for water affecting activities. Additionally, this plan sets out the conditions that apply to the taking of water within the region.

5. General Objectives

Water sustains the people and the land. In recognition of this, the following objectives apply to the taking of water and to the decision to grant or refuse permits for water affecting activities in the AW Region:

1. Protect water resources that support important cultural features and activities in the landscape
2. Protect potable water for the purposes of domestic supply and stock watering
3. Maintain the quality of the water resources
4. Provide for the needs of water dependent ecosystems
5. Minimise interference of access to, or the supply of water, between water users
6. Promote the sustainable use of water for pastoral, extractive industries and other economic enterprises within social and environmental limits.

6. The Taking of Water

Section 104 of the Act provides that a person must not take water from a watercourse, lake or well that is not prescribed or take surface water from land that is not in surface water prescribed area.

The following principles apply to the taking of water in the AW region.

1. Surface water and watercourse water, whether permanent or ephemeral, may only be taken in accordance with Aboriginal tradition.
2. For the purpose of principle 1, 'Aboriginal tradition' means traditions, observances, customs or beliefs of the people who inhabited Australia before European colonisation and includes traditions, observances, customs and beliefs that have evolved or developed from that tradition since European colonisation.
3. To ensure principle 1 is adequately addressed, the informed consent of Aboriginal people from the region must be sought in relation to determining if principle 1 has been adequately addressed.
4. For the purpose of principle 3, 'informed consent' means that Aboriginal people who will be affected by any new development of a water resource understand the implications of the development for them and their traditions. 'Aboriginal people' refers to:
 - a) in relation to the lands described in Schedule 1 of the Anangu Pitjantjatjara Yankunytjatjara Land Rights Act 1981 – the Executive Board of the Anangu Pitjantjatjara Yankunytjatjara
 - b) in relation to the lands described in Schedule 1 of the Maralinga Tjarutja Land Rights Act 1984 – the Council of Maralinga Tjarutja
 - c) in relation to the lands vested in the Aboriginal Lands Trust in pursuance of the Aboriginal Lands Trust Act 1966 – the Aboriginal Lands Trust.
5. Underground water may only be taken where:
 - a) the point of taking is not within:
 - i 20 kilometres from of a township or other locality, except where permission has been granted by the AW Landscape Board;
 - b) the taking of water will not adversely impact on any of the following:
 - i sites or vegetation that are of significance according to Aboriginal tradition or Aboriginal archaeology, anthropology or history;
 - ii the quality of the water resource;
 - iii water-dependent ecosystems that depend on that water;

- c) Monitoring is undertaken for bores exceeding extraction rates of 10 kL/day (0.115 L/sec). A monitoring plan will need to be approved by the Board and will require as a minimum the following information to be collected and reported every year: total volumes of water extracted per annum, the water depth, salinity of water (ppm), purpose of water use;
 - d) for bores exceeding extraction rates of 10 kL/day (0.115 L/sec), the water is taken through a meter supplied, installed and maintained in accordance with the South Australian Licensed Water Use Meter Specification (available at www.waterconnect.sa.gov.au), as may be amended from time to time;
 - e) unless it is not technically reasonable to do so, the water is taken and conveyed through a water-tight delivery system; and
 - f) the water is taken with the consent of:
 - i in relation to the lands described in Schedule 1 of the Anangu Pitjantjatjara Yankunytjatjara Land Rights Act 1981 – the Executive Board of the Anangu Pitjantjatjara Yankunytjatjara;
 - ii in relation to the lands described in Schedule 1 of the Maralinga Tjarutja Land Rights Act 1984 – the Council of Maralinga Tjarutja
 - iii in relation to lands vested in the Aboriginal Lands Trust in pursuance of the Aboriginal Lands Trust Act 1966 – the Aboriginal Lands Trust.
6. Principles 1-5 do not apply to water that is taken for:
- a) domestic purposes or for watering stock (other than stock subject to intensive farming);
 - b) native title purposes;
 - c) road-making, only where the water has a salinity greater than 5,000 total dissolved salts measured in mg/l;
 - d) fire-fighting;
 - e) control of declared pest plants and animals
7. Principle 5 does not apply to water that is taken for mining and petroleum exploration.
8. For the purposes of principle 6:

'domestic purpose' has the same meaning in s.3(1) of the Act. 'Domestic purpose' does not include (a) taking water for the purpose of watering or irrigating land, other than land used solely in connection with a dwelling; or (b) without limiting paragraph (a); or (c) taking water to be used in carrying on a business (except for the personal use of persons employed in the business)

'intensive farming' has the same meaning in s.3(1) of the Act and means a method of keeping animals in the course of carrying on

the business of primary production in which the animals are usually confined to a small space or area and usually fed by hand or by a mechanical means.

'native title purposes' means the taking of water by a person who is a native title holder in relation to the land or waters on or in which the water is situated and the taking is for the purpose of satisfying that person's personal, domestic, cultural, spiritual or non-commercial communal needs where they are doing so in the exercise or enjoyment of their native title rights and interests. 'Native title holder' means the person or persons who hold, or claim to hold, the native title in relation to the lands and waters according to their traditional laws and customs.

'road-making' means the construction of a road, the maintenance or repair of a road, or the alteration of a road. 'Road' means any street, road, thoroughfare, terrace, court, lane, alley, cul-de-sac, or place commonly used by the public, or to which the public are permitted to have access, and includes part of a road.

'fire-fighting' means any action undertaken for the purpose of preventing, controlling, suppressing or extinguishing a fire, or for training in these activities.

'control of declared pest plants and animals' means water used for the application of chemicals for the control of declared pest plants and animals.

Mining and petroleum exploration. The Board will work with the relevant State Government Departments to ensure the Statement of Environmental Objectives required through the Mining and Petroleum Acts correspond with the Board's objectives for protection of water related assets in the area.

7. Permits

A permit is required to undertake any of the Water Affecting Activities listed in Appendix 1. The objectives and principles in this section apply to the water resources in the AW region to the extent that this Business plan sets out the matters that the Minister or the Board will consider when exercising the powers to grant or refuse authorisations and permits under Part 2 Division of the Act. Permits are granted by the relevant authority. For the purposes of this plan the relevant authority at the date of adoption of this plan is:

- a) in the case of an activity referred to in Sections 104 (3) (a), (b), or (c) – the Minister; and
- b) in the case of an activity referred to in Sections 104(5) (b), (c), and (h) of the Act – the Board or its delegate.

Note that the relevant authority may change in response to changes to legislation, changes to the AW Landscape Plan 2021-26, or the adoption of subordinate legislation.

Applying for a permit or permission

As the processing and granting of a permit can take some time, applications for a permit must be made some months in advance of undertaking the water affecting activity. Information on applying for a permit is provided on the Department for Environment and Water website (Department for Environment and Water | Licences and permits) or the AW Landscape Board (www.landscape.sa.gov.au/aw) or by phoning the Customer Services Group at the Department on (08) 8463 3999.

If a permit is being sought for activities associated with mining, a permit or permission may be sought from the Department of Mining and Energy who will liaise with the AW Landscape Board if any approvals are required from the Board. Further information on requirements for mining activities including Mineral Regulatory Guidelines: MG 27 Community Guide for Early and Advanced Activities can be viewed on the DME website.

8. Objectives

1. to protect water resources that are culturally or spiritually important to traditional owners;
2. to protect water supplies for townships and homelands from interference or degradation caused by other uses or water affecting activities;
3. to protect the quantity and quality of water resources and the maintenance of natural hydrological systems and environmental flows;
4. to protect and restore the natural character of watercourses and floodplains;
5. to protect the ecological functions of water resources and dependent biological diversity;
6. to ensure that the construction and management of buildings and structures do not damage the ecology of watercourses and ensure that natural flows are maintained;
7. to keep watercourses free of obstructions that may impede natural stream flow or cause unnecessary flooding;
8. to retain vegetation in watercourses, associated riparian zones and floodplains to maintain the geomorphic stability of the watercourse, protect biodiversity, protect habitat, and maintain water quality;
9. ensure any water drained or discharged directly or indirectly into a well does not adversely affect the underground water quality, the aquifer or any ecosystem that depends on that water; and
10. ensure any water drained or discharged directly or indirectly into a watercourse does not adversely affect the watercourse water or underground water quality, or any ecosystem that depends on that water.



9. General Principles

1. Activities shall not interfere with assets of cultural importance without the informed consent of the land holding authority.
2. Activities shall not compromise the utilisation, conservation or quality of water resources or the capacity for natural systems to restore or maintain water quality.
3. Activities shall not take place where they are likely to adversely impact on the migration of biota.
4. Activities shall be designed to retain natural creek and watercourse systems including associated riparian vegetation.
5. The design, construction and management of structures and activities shall not result in watercourse erosion.
6. Activities shall be designed and located to account for the geomorphic characteristics of a watercourse or lake.
7. Activities shall not compromise the integrity of authorised scientific data collection on monitoring facilities related to the assessment and management of water resources.
8. Activities shall not:
 - a) be located in areas identified as ecologically sensitive by the AW Landscape Board
 - b) cause or exacerbate unnatural water logging or increased groundwater induced salinity;
 - c) cause deterioration in surface water, watercourse or groundwater quality;
 - d) detrimentally affect water-dependent ecosystems or environmental water requirements for underground water, watercourses or floodplains;
 - e) detrimentally affect ecological diversity and habitats; or
 - f) alter the direction, magnitude or seasonality of surface and groundwater interactions.

An approval is not required for the activities identified as exempt activities in this Section and in Appendix 1.

10. Management of Wells

A permit is required for the drilling, plugging, backfilling or sealing of a well and the repairing, replacing or altering of the casing, lining or screen of a well pursuant to section 104(3)(a) and (b) of the Act.

Location of drilling of a well

9. A permit for the drilling of a well (except for a replacement well) will only be issued where the requirements for the taking of water in sections 5 and 6 of this water affecting activity document have been met.
10. Notwithstanding principle 9, no wells shall be drilled into the unconfined aquifer in the karst system of the Nullarbor Platform Management Zone.

11. Further to principle 10, where a replacement well is drilled, the new well must be sited no more than 50 metres from the existing well, and no closer to a neighbouring existing well than the well that is being re-sited, and there is no change to the total volume of water extracted or to the conditions on the permit.
12. For the purposes of principle 11, a neighbouring existing well is defined as a well that has supplied water for irrigation, stock, domestic or commercial use in the last 10 years and is owned by another party.
13. The siting of stock (non-intensive) or domestic wells must have no detrimental effect on any other operational well, permanent or semi-permanent pool, spring, or permanent or semi-permanent flowing stream.

Well construction

14. The equipment, materials and method used in the drilling of a well, and the repairing, replacing or altering the casing, lining or screen of a well must have no adverse impact on the quality of the underground water resource.
15. Wells must only be drilled in such a manner that aquifers are protected during construction of the well to avoid contamination of the underground water resource. Where a well passes or will pass through two or more aquifers, an impervious seal shall be made and maintained between the aquifers to prevent leakage between the aquifers.
16. Wells for the purpose of aquifer recharge operations must be constructed so that the headworks allow both recharge and discharge operations to be metered without interference.
17. The headworks of a well from which a licensed allocation is to be taken must be constructed so that the extraction of water from the well can be metered without interference.
18. The headworks for the drainage or discharge of water shall be constructed so that the water cannot leak if the well becomes clogged.
19. The well shall be fitted with headworks of an approved design, commensurate to the expected underground water temperature and aquifer pressure, and the well equipped in such a way to allow control of the natural pressure flow of water and to allow monitoring of the pressure.
20. For the purposes of this plan, the term 'headworks' means any assembly on top of a well and located between the well casing and the water delivery system.
21. Wells constructed for the drainage or discharge of water at pressures greater than gravity, shall be pressure cemented along the full length of the casing. This does not exempt the need to follow the general specifications for well construction.

Conversion of petroleum wells to water wells

22. Petroleum wells may be converted to water wells in accordance with the requirements of the appropriate statement of environmental objectives required under the Petroleum and Geothermal Energy Act 2000 and approved water well construction standards, and the requirements of this plan. In addition, approval to convert an existing petroleum well to a water well will only be granted where the taking of water is first authorised pursuant to sections 5 and 6 of this plan.
23. Notwithstanding principle 22, due to very high pressures of aquifers within the Cooper Basin below the Great Artesian Basin, the inherent greater risk of failure, petroleum wells completed below the Eromanga Basin sediments shall not be converted to water wells.

Conversion of mineral wells to water wells

24. Mineral wells are to be drilled and decommissioned in accordance with the PIRSA general specifications, "Mineral exploration drillholes – general specifications for construction and abandonment", PIRSA Earth Resources Information Sheet, M21 or any subsequent related document.
25. Mineral wells may be converted to water wells in accordance with approved water well construction standards, and the requirements of this plan. In addition, approval to convert an existing mineral well to a water well will only be granted where the taking of water is first authorised pursuant to sections 5 and 6 of this water affecting activities document.

Well maintenance

26. The mechanism used to control artesian flows from wells connected to artesian aquifers (the well headworks) shall be properly maintained (as a non-leaking mechanism).
27. Deepening of a well or repairing, replacing or altering the casing, lining or screen of a well must only occur where:
 - a) the equipment, materials and method used in the drilling, plugging, backfilling or sealing of a well do not adversely affect the quality of the underground water resource; and
 - b) the aquifers are protected during the repair, replacement or alteration of the casing, lining or screen of a well to avoid contamination of the underground water resource and prevent adverse impacts upon the integrity of the aquifer.

Plugging, backfilling or sealing of a well

28. Wells that are no longer operational or new wells that are not proposed to be operational shall be back filled in an appropriate manner.
29. The plugging, backfilling or sealing of a well must only occur where the equipment, materials and method used in the

plugging, backfilling or sealing do not adversely affect the quality of the underground water resource.

11. Draining or Discharging Water Directly or Indirectly into a Well

A permit is required for the draining or discharging of water directly or indirectly into a well pursuant to section 104(3) (c) of the Act.

30. Water that is drained or discharged into a well must comply with the Environmental Protection Act 1993 and any associated policy.
31. A permit to drain or discharge water into a well will not be issued unless a risk assessment is undertaken to the satisfaction of the Minister. This risk assessment must be consistent with the National Water Quality Management Strategy – Australian Guidelines for Water Recycling: Managing Health & Environmental Risks, Phase 2, 2009 and other related documents current at the time, and include:
 - a) an investigation into the suitability of the draining or discharging site, including but not limited to tests for transmissivity, maximum injection pressures and calculated likely impacts on the integrity of the well and confining layers, and impacts of potentiometric head changes to other underground water users.
 - b) an appropriate operation or management plan demonstrating that operational procedures and monitoring regime are in place to protect the integrity of the aquifer, minimise the wastage of water and protect the discharge site on an ongoing basis.
 - c) a water quality assessment which identifies hazards in the source water.
 - d) a report on the consequences and impacts to the native underground water resource where the water quality characteristics (salinity and chemistry composition) of the water to be discharge differs to that of the native underground water.
32. The water quality assessment required in 31(c) above will include assessments of (but not limited to):
 - a) pH, total dissolved solvents, turbidity, ammonia, nitrate, nitrite, total phosphorus, sodium, chloride, sulphate, calcium, magnesium, bicarbonate, iron, total arsenic, total boron, total cadmium, total chromium, total lead, total manganese, total zinc; and
 - b) pesticides, volatile organic compounds and petroleum hydrocarbons; and
 - c) trihalomethanes where the water to be drained or discharged has been treated by chlorination.
33. Water that is drained or discharged into a well only by means of gravity is exempt from meeting the requirements of principle 31(a).
34. Further to principle 31(b), continuation of draining and discharge is dependent on an annual report that addresses the impacts to the native underground water at the draining or discharge site. Roof run-off (surface water) captured in a closed system and then drained or discharged into a well is exempt from this principle.

35. For the purposes of principles 31 and 32 the relevant concentrations, levels or amounts shall be measured in sufficient representative samples of:
 - a) the water to be drained or discharged; and
 - b) native underground water collected from the proposed point of injection, or as near as possible to the proposed point of injection;
 - c) where “sufficient representative samples” means suitable samples, collected with equipment appropriate for the substance, material or characteristic to be measured and taken at suitable locations and times to accurately represent the quality of the relevant water.
36. For the purposes of this plan, the term “native underground water” means water occurring naturally below ground level that exists in the relevant aquifer absent of any such water drained or discharged to that aquifer by artificial means.
37. The draining or discharging of water directly or indirectly into a well must not detrimentally affect the ability of other persons to lawfully take from that underground water, or degrade ecosystems dependent on the underground water.
38. Additional authorisations may be required under the Environmental Protection Act 1993.

12. Building or Placement of Structures

A permit is required for the erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse, pursuant to section 104(4)(b) of the Act.

39. The erection, construction or placement of any building or structure in a watercourse or on the floodplain of a watercourse must not adversely affect the provision of environmental water requirements of those areas.
40. Buildings or structures that impede the flow of water must be designed to include a low flow bypass mechanism, excluding those authorised structures for the specific purpose of measuring stream flow.
41. Buildings and structures should be maintained in an appropriate condition to perform their intended function.
42. The erection, construction or placement of any building or structure in a watercourse or on the floodplain of a watercourse shall be designed to:
 - a) minimise the risk of erosion resulting from the construction and location of the structure;
 - b) maintain natural drainage lines;
 - c) not interfere with cultural features or cultural activities of traditional owners;
 - d) allow for the migration of aquatic biota;
 - e) maintain the hydrology of a stream in such a way as to minimise the impact on the ecology of the watercourse; and

- f) not cause flooding, either upstream or downstream.
43. An authorisation is not required under this sub-section where:
 - a) the building or structure will be erected, constructed or placed no less than 40 metres from the edge of a watercourse and the building or structure does not take water or is not associated with the taking of water; or
 - b) the Board has provided financial or any other form of assistance in relation to the erection, construction or placement of the building or structure pursuant to section 27 of the Act.

13. Draining or Discharge into a Watercourse or Lake

A permit is required to drain or discharge water directly or indirectly into a watercourse or lake in the landscape pursuant to section 104(4) (c) of the Act.

44. The draining and discharge of water into a watercourse or lake must not:
 - a) adversely affect the cultural values of the watercourse or lake as determined by the traditional owners;
 - b) adversely affect the natural character of the watercourse or lake;
 - c) increase the risk of flooding downstream of the point where water is drained or discharged; or
 - d) adversely affect the health of biota dependent on the watercourse or lake.
45. Water may only be drained or discharged into a watercourse or lake where protective measures have been provided to minimise erosion or degradation in the quality of the receiving water.
46. For the purposes of principle 45, protective measures include, but are not limited to:
 - a) reuse of drainage or discharge water under conditions that would not present a risk to public health or the health of ecosystems;
 - b) treating the water to be drained or discharged into the watercourse or lake
47. The rate and location of discharge or drainage of water into a watercourse or lake must occur such that:
 - a) geomorphology of the watercourse is protected;
 - b) the flow capacity of the watercourse is considered;
 - c) there is no increase in the risk of flooding either upstream or downstream; and
 - d) the migration of aquatic biota is not adversely affected.
48. Any structures or measures to minimise erosion or degradation in the quality of the receiving water for the purposes of principle 45 must be managed to ensure that they continue to function according to their design.
49. Waste water from a desalination process shall not be drained or discharged into a watercourse or lake.
50. An authorisation is not required under this sub-section where



the Board has provided financial or any other form of assistance in relation to the draining or discharging of water directly or indirectly in to a watercourse or lake pursuant to section 42 of the Act

14. Removal of Material

A permit is required to excavate or remove rock, sand or soil from a watercourse or lake or the floodplain of a watercourse, pursuant to section 104(4)(h) of the Act.

51. Alteration to the alignment of a watercourse shall only occur where it is for the protection of existing development and infrastructure or rehabilitation of a watercourse, and the realignment does not result in any of the following:
 - a) increased erosion
 - b) increased flooding
 - c) bed and bank instability
 - d) downstream sedimentation
 - e) loss of riparian vegetation
 - f) decline in water quality
 - g) alteration to the natural flow regime of a watercourse.
52. The excavation and removal of rock, sand or soil must not result in erosion of the bed or banks of a watercourse or adversely impact on either:
 - a) the ecology of a watercourse or floodplain
 - b) migration of aquatic biota
 - c) increase or decrease the capacity to capture water.
53. A permit is not required under this sub-section where:
 - a) the Board has provided financial or any other form of assistance in relation to the excavation or removal of rock, sand or soil from a watercourse or the floodplain of a watercourse pursuant to section 27 of the Act
 - or
 - b) less than 2 cubic metres of material is removed in any 1 year period.

References

AGT 2010, Alinytjara Wilurara Natural Resources Management Region Groundwater Review, Report No. 2009/993, Australian Groundwater Technologies, Mile End.

Department for Water, 2011. Non-Prescribed Groundwater Resources Assessment – Alinytjara Wilurara Natural Resources Management Region. Phase 1 – Literature and Data Review (Report No. 2011/18).

Iluka Resources Limited, 2011. Jacinth-Ambrosia Investment Market Site Visit (1 June 2011).

Johnston T H, 1941, Some Aboriginal routes in the western portion of South Australia. Proceedings of the Royal Geographical Society of Australasia (South Australian Branch) 42:33-65.

Parsons Brinckerhoff 2005, Eucla Basin hydrology desktop review, Iluka Resources, Adelaide

Rowe K, Woods J, Denny M and Mackenzie E, 2007, Alinytjara Wilurara Natural Resources Management Region Draft Catchment Water Management Plan, South Australian Arid Lands Natural Resources Management Board and Australian Water Environments.

Watt EL and Berens V 2011, Non-Prescribed Groundwater Resources Assessment – Alinytjara Wilurara Natural Resources Management Region. Phase 1 – Literature and Data Review, DFW Technical Report 2011/18, Government of South Australia, through Department for Water, Adelaide

Appendix 1: Summary of Water Affecting Activities requiring a Permit, Board Permission or Landholding Authority consent

Landscape SA Act (2019)	Water affecting Activities	Water affecting Activities examples	Permit, consent or permission	Activities not requiring a permit consent or permission	Relevant Authority
104(2)	Take of water from a watercourse, lake or well that is not prescribed or take surface water from land that is not in a surface water prescribed area	taking surface water taking underground water	Board permission and/or Landholding Authority consent	Taking water for: a) Domestic purposes or for watering stock (other than stock subject to intensive farming) b) Native title purposes c) Road making, only where water salinity is greater than 5,000 total dissolved salts measured in mg/l d) Fire-fighting e) Control of declared pest plants and animals Taking underground water for mining and petroleum exploration	Board
104(3) (a) and (b)	Drilling, plugging, backfilling or sealing of a well Repairing, replacing or altering casing, lining or screen of a well	drilling a well repairing, altering or replacing the screen well closure	Permit		Minister
104(3)(c)	Draining or discharging water directly or indirectly into a well	Mine dewatering MAR schemes	Permit		Minister
104(4)(b)	The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse	Buildings or structures Culvert Crossing point	Permit	Activity that is proposed to be undertaken at a distance of 40 meters or more from the banks of the nearest watercourse and that does not involve any structure associated with the extraction of water Activity where the Landscape Board has provided financial or other assistance pursuant to Section 42 of the Act Mining and petroleum exploration activities where approvals have been obtained from DME	Board
104(4)(c)	Draining or discharging water directly or indirectly into a watercourse or lake	Mining or petroleum production wastewater Desalination wastewater		Activity where the Landscape Board has provided financial or other assistance pursuant to Section 42 of the Act	Board
104(4)(h)	Excavating or removing rock, sand or soil from a watercourse or the floodplain of a watercourse	Realignment or alteration of a watercourse		Activity that is proposed to be undertaken a distance of 40 metres or more from the banks of the nearest watercourse Activity that involves removal of less than 2 m ³ of material in any 5 year period Activity where the NRM Board has provided financial or other assistance pursuant to section 42 of the Act. Mining and petroleum exploration activities where approvals obtained from DME	Board



Adelaide Office

Level 9, 81-95 Waymouth St
ADELAIDE, SA 5000

GPO Box 1047
ADELAIDE 5001

Ceduna Office

50B McKenzie Street
CEDUNA, SA 5690

PO Box 569,
CEDUNA 5690

Tel: 08) 8463 4843

aw.landscapeboard@sa.gov.au

landscape.sa.gov.au/aw/

NAWI LANDSCAPE
SOUTH AUSTRALIA
ALINYTJARA WILURARA



Government of South Australia
Department for Environment
and Water

